

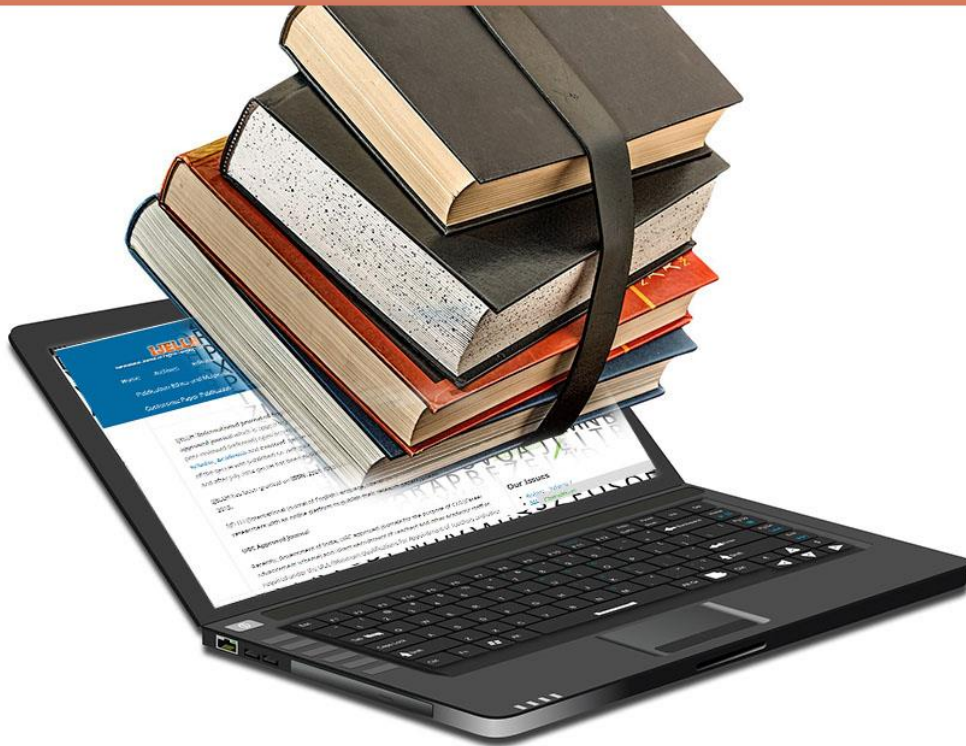
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### Deconstructing Patriarchy through the study of Women in Science by Rachel Ignatofsky

#### Abstract

The paper tries to highlight the contributions that women have made in a man's world. The contributions of women in science have been spurned for long in the past but the modern world cannot reject the fact that so many women from diverse disciplines be it psychology, biology, genetics, engineering, mathematics or geology have become pioneers in science and brought a remarkable shift in the way we think about the world and the way we think about ourselves. Their intellect has splintered the patriarchal mindsets and shattered the wall of traditions which aimed to suppress and oppress women. Women emancipated themselves with the tool of Science and showed that even in conditions which aren't conducive to their growth and development; they can perform as well as men who possess ideal working conditions which adhere to their growth and development.

The paper also questions the age old traditions and portrays the success of women despite the dire circumstances which would have toppled the confidence of most men if they would have been in their place.

**Keywords:** Biology, Geology, traditions, Questions, Women in Science, Success.

## Introduction

Patriarchy is a common thread that runs through almost all the structures of the world. More or less, patriarchy is undeniable as it operates not only in communities but the idea of domination through exploitative differentiation is consciously and unconsciously imposed upon individuals through the wheels of families which are supposedly acting for their welfare and betterment. An idea which deserves loathing and detestation of everybody, patriarchy is still the basic foundation that constitutes many religious traditions which consider women as an inferior sex and try to domesticate them as if they were cows who asked for our protection. Women have never had the prerogative to a life which men have received so easily sans any efforts on their part. They have been used, abused, objectified and treated like non-living things by patriarchal men and even patriarchal women. Their right to food, healthcare, and education was spurned as they were the second sexes who were treated worse than the third sex. In such an environment where regressive mentality was rampant, women could not grow to the fullest. They were denied primary education, high school education and higher secondary education. College was a dream-like distant star lakhs of light years away. Women's dreams and ambitions took backseat because only men could perform important tasks which would enhance agricultural productivity or industrial productivity and thereby boost the economy. Such fallacious notions were inherited by several generations from their ancestors and, sometimes, even carried with vanity and unfettered pride.

As a result of such perpetual obnoxious practices, women lost their dignity and patriarchy triumphed. The victory of regressive minds destroyed the confidence of women in themselves and their power. Despite several amendments in power, changes hardly took place and for several centuries, half of the humanity which was constituted by women was thought of as a burden and power dictated this truth to the people who believed in this social construct.

Women were rendered helpless. Violence was used to control them and traditions were deceitfully employed to manipulate them. A woman must be like Goddess Sita and, if her husband dies, she should give up her life by accepting Sati or death by immolation of herself into the fire. It was never mentioned to the men in the past that they should also love and respect their wife like Lord Narayana does in the Hindu mythology or Sanatana dharma. Men dictated their needs and women were slaves and servants who were meant to fulfill them. It was thought by men that women lacked intelligence and were merely emotional creatures. Women afraid of the aggressive and violent nature of men lacked confidence to rebel against the tyranny of men. Their fear became the cause of their doom and their acceptance made their reality unalterable.

Purity, chastity and service which aren't really the biological characteristics or inclinations of women were coerced by traditions and religious fanatics as well as totalitarian political authorities. Their identities were summarized by their role towards men and not towards themselves. Further, the oppression of women justified by Christian male commentators of Bible through their misogynistic, sadistic and sexist mindsets crumbled the structural foundation which gave meaning to the lives of women. Inferiority settled in their unconscious mind and repetition of the regressive commentaries of the mythical narrative of Adam and Eve made things even worse. Inferiority became as natural as breathing for women. It appeared as if women were robots striving to satiate men because their identities were a part of men's identities. Man was made in the image of God but a woman wasn't.

Most Church fathers thought of women as gullible, untrustworthy, promiscuous and irrational. They thought of women as a morally weaker sex and an easier prey. Because, the serpent could tempt Eve, all the women suffered the so-called first impression and are still suffering and enduring the torment caused by patriarchal communities and families. The Bible which acts as a guide for rightful conduct and keeping away from wrongdoing itself became the center of wrongdoing because the story of Eve depicted her as a symbol of sinfulness and disobedience. Also, she was not created for her own self but for Adam because God thought Adam would have needed her as he was lonely and alone. Many feminist critics consider Bible or Quran as texts responsible for the extinction of the identities of women and silencing of their voices against oppression. They maintain an unequivocal stand that Abrahamic religious texts have marginalized women and made them subalterns due to the genesis account where a woman comes later and man comes first. Many have derided these religious texts as works which try to make sense of patriarchy and perpetuate patriarchy through a generalized set of moral codes which apply to the entire world and are absolute in nature.

The center or the Genesis account remained outside the questioning or rather escaped questioning. The structure of Christianity questioned pagan belief systems and even ridiculed them but it itself became a dictator which converted people to develop faith in a monotheistic God. Christianity became an imperialist and a colonialist and disparaged the belief in worship of nature or elements of nature or a pantheon of gods by positing such beliefs as preposterous. A vindictive and a jealous God of the Old Testament rose to the scene who was quite conspicuously a male God because in the entire Holy trinity of Christianity, there was no space for a woman. Osho an Indian philosopher criticized Christianity severely regarding this structural framework and even referred to Christianity as the deadliest of all poisons. Osho a post-structuralist and a deconstructionist by heart advocated the equality of men and women and strongly affirmed that only meditation can transform the awareness of people and bring

equality. He fearlessly said that the old religions of the past should be thrown away because they are lifeless and do not fit the needs of a modern humanity. The ancient religions have ignored the needs of half of the humanity i.e. women. In fact, the word humanity itself appears sexist as it includes man but not a woman.

Woman was treated in the same way as a sudra or a manual worker was treated: without respect and stripped of her dignity. In fact, even workers were paid at times but women were always paid less and sometimes not even paid their due. They were considered equivalent to animals and devoid of consciousness. Their rights possessed no inherent meaning and essentially, they were merely walking corpses. Women had lost their zest, exuberance and vivacity. For a long time, they were thought of as mindless creatures that needed men to take decisions on their behalf.

They had to bear physical violence, mental violence as well as subtle violence. Physical violence pervaded in almost every third house while mental violence was all pervasive or almost omnipresent. Women were merely an embodiment of feminine characteristics such as maternity and gentleness or softheartedness and they were greatly respected as mothers but that was the line they were not supposed to cross. The function of women was to bear children or to procreate and nurture the child. Her identity, vision and dreams were personifications of fictional characters that had no place in the real world. Women were not allowed to dream and believe in their potential.

The manipulation by society, priests and politicians was so well orchestrated that glorification of men and divine men became an unsaid norm in the society. But women were considered bereft of divinity. In Christianity, Virgin Mary is worshipped because of her chastity and purity. But what if she wasn't a virgin? Would she have been revered and adored by Christians all over the world in the same way? The answer is constituted by a negative sentence.

For a long time, Buddha didn't make any women disciples. An argument has been made in the past that this was due to the fact that he was a sanyaasi or a renunciant or a monk so he was supposed to maintain a certain amount of distance from women. But this idea seems highly absurd as monks have to control their senses in the midst of the so-called temptations rather than escape from them. Were women thought of as less intelligent by Buddha? Were women incapable of attaining nirvana? Scholars and feminist critics may share different opinions regarding this topic but the fact stays that Buddha did take a lot of time before making any women disciples.

As a feminist, another point seems very relevant if we try to question Christianity on a rational basis. Why do we have a Son of God who can redeem us from our sins and not a Daughter of God? Why cannot a woman be on the right hand side of God or Almighty Father? Why does Christianity have no place for worship of an Almighty Mother? If we try to understand our existence and our birth, we can conclude that we needed both our father and mother to bring us into this cosmos. One cannot say that he came from his father alone. One cannot exclude a woman's contribution in creation of new progeny in this world as an existentialist and a rational thinker. So, how is it that we just have an Almighty merciful father and not an Almighty merciful mother?

Is God pure because God abstains from sex? Are human beings fallen because human beings succumb to their natural instincts and biological needs? In Christianity's concept and idea of heaven, there is no marriage. This is parallel to the activities of Vaikuntha in Hinduism where sex is absent because people have spiritual bodies and they are only engaged in serving Lord Krishna and Goddess of Fortune. Are we merely servitors of the divine and do our desires and instincts not matter in this confounding universe? There are several indispensable questions that need to be asked because the movement of transformation begins when people are fearless and unafraid to ask questions.

All three monotheistic religions i.e. Christianity, Islam and Judaism are referred to as Abrahamic religions because all three of them believe in Prophet Abraham and his descendants to hold an important place in spiritual development. Why does a prophet have to necessarily be a man be he Jesus, Mohammad, Moses or Abraham? Is woman merely a vehicle to bring the male child into this world?

Christian apologetics may argue that there are some female prophets such as Miriam, Deborah and Huldah and that their lives are described in ancient Israelite literature but how many pastors actually talk about them? How many of them consider their importance equivalent to other male prophets? We know the stories and anecdotes from the lives of male prophets but the narrations of the tales of female prophets aren't popular. Is it because Abraham was patriarchal in nature? Debates persist even till this date.

The traditional lifeless identity of women was challenged by Shakta philosophy of Hinduism. Shaktas worship Adi Shakti as the source of all creation and the creator of Brahma, Vishnu and Mahesh but maintain the view that the divine is androgynous or half-male and half- female. Lord Shiva in the Devi Bhagavata Purana challenges the patriarchal notions which dominate the minds of asuras or the ones who oppose the service of God. He gives His wife Parvati an equal status and shows her that within her Mahakali form she contains both light and darkness. When Parvati seeks Shiva's protection from the war started by asuras Shumbha and Nishumbha, Shiva gives her a leaf of bilva tree with the smell of deer musk. This reminds Parvati that the help she is seeking outside is the help that is already present within Her. She has forgotten that she needs no one to protect her and she is as powerful as Her husband.

But such empowering narrations weren't as popular across the world as Christianity, Islam and Judaism do not recognize Hinduism as a true religion because, according to them, their religion is the only true way of life and living as propagated by missionaries. In the history of English literature, we can clearly observe that Christianity began the conversion process by dismissing



the gods of pagans as false gods. Even the poems with pagan features were written by Christians.

In majority of the history of literature, women were anonymous and wrote books by hiding their works from their families because they feared that their families might react badly if they get to know the truth and, also, people did not take female writers seriously several centuries back. Women were domesticated and considered incapable of artistic brilliance. Even if a woman's genius came out through her work, she was denied the working conditions that men possessed and her works were still considered below man's works because a very few female writers became popular in the past.

Females had to undergo such suffering which is almost inconceivable for the post-modern man to envisage. She was denied education and voting rights and even the right to decide the groom of her choice. The patriarch or the head of the family decided where the daughter would marry.

Women were always viewed as either fit for marriage or fit to be a widow. They were never thought of as dreamers, visionaries or achievers. They didn't possess the right to remarry and if a woman engaged in an affair, she was considered an outcast. Her desires and her inclinations were silenced and she did not possess the right to make decisions in her own life. She was not allowed to make mistakes and was severely punished for any errors or mistakes she made even if they did not harm anybody.

But despite the devouring oppression and exploitation, women emerged as phoenixes that rose out of the ashes of traditions and victimhood. Renaissance and reformation made people question the age old traditions and myths of ancient religions and the two World Wars made people question the existence of an intervening God who cared about humanity. Science acted as a force which gave women courage to follow their hearts and trust their instincts. Even many sires of women who wanted to pursue science exhorted their daughters in their quest of

knowledge and believed in the beauty of their dreams. Science became the pathway to a woman's liberation from her sorrows and her wretched life. Use of reason and logic by women fostered and instilled confidence in them to become the alchemists of their own lives. Women in Science refuted the patriarchal notions and became believers in themselves.

These women looked at structures with suspicion and doubt. They were skeptical about knowledge that was given through deductive reasoning. Women in Science studied authorities, experts and stalwarts of science but maintained their scientific temperament by applying inductive reasoning and observing various phenomena empirically. They were not afraid of the rebuke and criticism and, precisely, that is the reason why women succeeded in science. Science unlike religion is objective in nature. It tries to analyze things without any opinion. Science as a process is unbiased and free of prejudice. Science means rethinking things and integrating imagination with evidence and proofs. Science as such doesn't have any beliefs. That's the reason why science embraces changes with ease and bliss while religious fundamentalism is averse to changes and is orthodoxical in nature.

Earlier, women were good conductors of patriarchal beliefs but in today's era of technological revolution, more and more women are becoming insulators or bad conductors of the dominant patriarchy and asserting their opinions with pride and conviction. They have proven themselves in the face of envious patriarchs who include both patriarchal men and patriarchal women who wanted to dispel their flame of passion.

But the indomitable will of women and their iron will ensured the rediscovery of their genius and made them unstoppable even in the face of overwhelming obstacles which would have deterred most men in their place to pursue their goals.

Patriarchy and patriarchal minded people deserve sharp reproach and incisive criticism while these women who have strived to change the world through their ingenious

breakthroughs deserve our adulation and admiration. They emerged like lotuses out of the mud of patriarchy which is filled with the dirt of regressive mentality.

These women emitted their fragrance of prowess and innovation freely and some of them weren't merely women in science but also humans who stood for humanity before anything else. Their contributions weren't confined to science but extended to altruistic activities which revived the hope of humanity. It has to be realized that feminist thought doesn't want unfair treatment of men but fair and just treatment of women by offering them equal opportunities of education and work. A feminist talks about gender discrimination because he or she wishes to deconstruct the toxic ideology of patriarchal discrimination and assist in making the society an egalitarian one and this is certainly not possible without discussing about the contributions that women have made in the scientific world. Many men and even patriarchal women tend to think that they are biologically made for domestic unpaid household work but they fail to realize that such kind of chauvinistic thought is actually a product of culture and not biology.

Biology is interconnected with the past, present as well as the future. But culture is steeped in the very layers of the past which still affects the mental conditioning of men and women who are stuck in the abyss. This is not to say that culture is a bad thing. Cultures are indeed centers of celebration and delight. They do give opportunities to rejoice in the beauty of the power of myths and traditions but any culture that has a patriarchal lens ultimately diminishes the glory of a woman and reduces her stature. Her standing in society is defined more by the cultural stereotypes which have an absolute say on her roles. Cultures dictate the reality of women through metaphysical stories and authoritarian knowledge. Many cultures do encourage inductive reasoning but most of the cultures are still wearing the crown of deductive reasoning. The result of such ownership of women's roles where women are thought of as not very intelligent leads to the death of the very soul of science which needs both men and women

to believe in themselves and work together with mutual respect and friendship. Even if science manages to stay alive in such inescapable social framework, it would be science with a blind moral framework or science with a lame philosophical stance or science whose one arm and one leg are ripped off its body.

The body of Science stands for equality because science welcomes reasoning and questioning from everyone be it a toddler, high school student, a dropout or a homemaker. Science makes no distinctions on the basis of caste, creed, color, religion, etc. Science is an apostle for revolution and evolution of human thought and it cannot progress without the participation of women and the recognition of their work. No matter what the circumstances be science has always stood for equality and objectivity. Scientists may have patriarchal beliefs but science doesn't.

Science must never be confused with scientists. Scientists are individuals while science encompasses a whole body of people including men and women who are curious and who look up to the stars and question the origin of galaxies and the design of this universe. Science discriminates between schools of thought and not between people who come from distinct backgrounds.

It is important therefore to maintain the spirit of science by providing significant and indispensable information about the women who have contributed vastly in the various fields and sub-disciplines of science and changed the way we perceive things and processes that govern the physical and non-physical world. Their stories of perseverance and passion serve as inspiring role models and inspire us to dart fearlessly in our own scientific journeys and comprehend and confront the complexities of our world.

### 1.1 Blurb of the book

Women in Science highlights notable women's contributions to various scientific fields to inspire readers young and old. A fascinating collection full of striking, singular art, the book features 50 profiles and illustrated portraits of women in 'Stem' from the ancient to the modern world and also contains infographics about interesting and relevant topics such as lab equipment and rates of women currently working in 'Stem' fields.

### 1.2 About the author

Rachel Ignatofsky graduated with honors from Tyler's School of Art's graphic design program in 2011. Now she lives in Kansas City, Missouri, where she spends all day drawing and learning as much as she can. She has a passion for taking dense information and making it fun and accessible and is dedicated to creating educational works of art.

Rachel is inspired by history and science and believes that illustration is a powerful tool that can make learning exciting. She uses her work to spread message about education, scientific literacy, and powerful women. She hopes this book inspires girls and women to follow their passions and dreams.

This is Rachel's first book. It was a New York Times Best Seller and hailed and declared amongst the Best Science Books of 2016 by Science Friday. It was also acknowledged and appreciated as one of the Greatest Science Books of 2016 by Brainpickings.org. This book has also received applause and commendation from Wall Street Journal, Entertainment Weekly, Scientific American.com's Symbiotic and many illustrators, authors and feminist critics and thinkers. Although the book is meant for children who are preteens and teens, this book is also

meant for all those who believe that women have much more within them that patriarchy turns a blind eye to.



Rachel Ignatofsky writes about the lives and accomplishments of approximately fifty women in Science. It is certainly a benediction that such a beautifully illustrated book about scientific female pioneers has reached the hands and eyes of reading aficionados and enthusiasts. Such a book is indeed rare and no less than a gem for seekers and curious minds.

#### Florence Bascom

The writer talks about the inspiring and stirring life of a geologist named Florence Bascom who published 40 scientific research papers in her lifetime and was the second woman in America to complete her geology doctorate. Her personal life divulges that her father was very encouraging and advised her to follow her heart's calling.

Florence Bascom was born in Massachusetts in the year 1862. Her life and journey like many other women of her time was very difficult. She was coerced to take her classes behind the screen so she wouldn't distract any of her male classmates.

It is noteworthy to observe that even in the nineteenth century after the age of Reason, or simply The Enlightenment (1685-1815), the roads of men's mentalities stayed narrow. Rather than broadening the mentality, men considered women unworthy or unintelligible creatures. To partake in studying with a woman made men feel ashamed. The sexist gender differentiation evident in Florence Bascom's life clearly evinces that more men may have been intellectuals but less men were actually humans. Men may have looked at established traditions with skepticism but they certainly did not criticize the treatment meted out to women. They may have had higher IQs but they certainly lacked emotional intelligence and empathy.

The circumstances may have been highly appalling and dreadful for Florence but just like a river cuts through rocks with its persistence, Florence became highly successful with the aid of her faith and diligence.

Florence was the youngest of the five children in her family and unlike most of the orthodoxical families; she was exhorted and encouraged by her father John Bascom to pursue geology. Her father moved her and her family from their hometown to accept the position as President of the University of Wisconsin, the university where Bascom would begin her education. Her father helped her carve her own path and propelled her to pursue the study of rocks and minerals i.e. geology which was at that time a male dominated discipline. It was a daunting field for women during that time.

It is important in this context to understand that family in patriarchal countries usually refers to a man, his wife and his children. They collectively sustain the social order of patriarchal and heterosexual legal institution that has been legalized by the State. But families have the capacity to nurture and go against the system.

Florence Bascom's father John Bascom and her mother Emma Curtiss Bascom stressed the importance of an egalitarian society which is the core aspect of feminist thought and literature.

More importantly, they practiced feminism in their daily lives which is visibly manifested in the life of their daughter Florence.

Florence's mother Emma was a suffragist and her father was a professor. Both of them were staunch supporters of women education and empowerment. Her father honored and venerated women and her mother fought for procuring women rights pertaining to voting. Both of them were uncompromising adherents to the cause of securing voting rights for women. They believed that education was not the prerogative or birthright of men alone. Women deserved to pursue the same education that men received.

In this way, they deconstructed patriarchal beliefs and notions in their own household and urged their daughter to pursue natural science. Such parenting enabled Florence not only to become intelligent and proficient but a highly mature and an empathetic woman too.

Despite her challenging circumstances, Florence contributed immensely to the field of science. She helped us understand how mountains come into being. When everyone reckoned that a layer of rock was a result of sedimentation, she brought to light the correct explanation by elucidating that a layer of rock was actually caused by lava flows.

Apart from a geologist, she was also an editor of *The American Geologist* as well as a teacher at Bryn Mawr College. She performed significant work for US Geological survey and emerged as one of the founding authorities of the field of Geomorphology which is a study of changes in earth's geography over thousands of years. The maps of New Jersey and Pennsylvania which she concocted are used even today. Such was the precision and perfection in her work. Excellence outlined her work.

The values that Florence's parents gave to her left a rich legacy to the world. She founded the geology department at Bryn Mawr college and motivated other women to enter the field of geology. She guided and mentored petroleum geologist Maria Stadnichenko, glacial geomorphologist Ida Ogilvie, Isabel Fothergill Smith, Dorothy Wyckoff, and Anna Heitonon.



Her students became thriving scientists and some were also featured in American Men of Science.

### Elizabeth Blackwell

Elizabeth Blackwell was the first woman to get a medical degree. She was born into a family which emphasized justice and equality. They were unorthodox in nature.

Elizabeth lived in a joint family with six other siblings and four maiden aunts. Her family comprised of abolitionists who regarded women's liberation above everything else. Her father was an active abolitionist. The family often discussed issues such as women's rights, slavery and child labor. These discussions showed how ripe the emotional intelligence of Elizabeth's parents was and how advanced they were in contrast to the families during those times.

Hannah and Samuel never whipped their children as a corrective measure for bad behavior. Their bad behavior was recorded in Barbara's black book. This reminds us of the contrasting picture of Victorian England depicted in the novels of Charles Dickens where children were coerced to work and they were beaten if they did not work.

Elizabeth had very supportive parents but her family suffered severe financial issues. Impelled and compelled by her pressing financial concerns, the sisters Anna, Mariah and Elizabeth started a school, The Cincinnati English and French Academy for Young Ladies which rendered instructions in all subjects and charged tuition fees. The school was not an ambitious endeavor but rather an effort to generate income for the Blackwell family who had lost their most profitable sugar refinery in a fire. Further, the death of Elizabeth's father when she was seventeen made the circumstances worse for the entire family.

But her grief did not dissuade her from achieving what she visualized. Earlier, Elizabeth was not riveted by the field of medical science but when her friend passed away due to uterine cancer, something struck her heart. Grief enveloped her heart beholding the agony and

suffering her friend underwent. Elizabeth believed that her friend might have experienced less pain if only she had a female doctor.

She was guided and trained by male doctors and friends and she also read books from their medical libraries. She applied to all medical schools but was only accepted into Geneva Medical College. Her applications to other medical schools were rejected because of the extant patriarchal and gender biased mindset which refused to give admission to a woman to pursue medicine.

It should be noted that a lot of men proclaim that women are the causes of all the problems in the world but this remark is very casual, derogative, sexist, arrogant, slippery and chauvinistic. It is preposterous and stupid too.

Women have acknowledged the progress made by men in the past and assisted their husbands, brothers or fathers even if they were intolerant, bigots, sexist or sadistic because they cared for their families irrespective of the hurt they inflicted upon them. In fact, men could succeed in their careers only because women did the other half of the work i.e. domestic household work without any payments. It should be objectively understood that any work be it domestic or outside work should be paid its dues. Either the husband or the employer of the husband should pay the woman for her work as a home-maker because she not only does the work of cleaning and cooking but also stays at home to take care of her children which are not her sole responsibility. But the bitter truth is a thick cloud which hides the dreams of feminist critics and women who aren't literate enough to even understand the torment they keep on enduring.

Why shouldn't men acknowledge the prowess of women? Are they afraid of her fire of passion? Or are they afraid about the possibility that women will solve all the problems created by men?

In this context, it is natural to understand why Elizabeth despised and loathed marriage. She endured the abominable and vile gender prejudice in her early education. She was met with resentment and inimical eyes. She had to sit separately from the male students. Her teachers were embarrassed by her presence during anatomy lessons. Most of the teachers showed no mercy to her. They were blunt and unfriendly towards her.

Their callousness doesn't require a discerning eye. People seemed to be having disdain for women who did not conform to the society. But Elizabeth's unrelenting toil and her trenchant intellect bore fruits of success, innovation and high opinion.

She toiled in a hospital in Philadelphia. Elizabeth discerned and deduced how hospital conditions led to the spread of infectious disease. Her presence of mind was laudable. She wrote her thesis on how good hygiene could prevent the spread of typhus. She stood for better hygiene in all circumstances.

Her sister Emily also became a doctor. Elizabeth and Emily opened the New York Infirmary for Indigent Women and Children in 1857. This infirmary was a place for impoverished people to get treatment. It was also a center for female medical students and nurses to learn.

Elizabeth went on to find the Woman's Medical College in 1868 and London School of Medicine in 1874.

Her early upbringing resulted in her multi-dimensional development where she rose not only in terms of intellect but also as a human. She was met with hostility and rejection in her adulthood but she accepted everyone as they were. She was kind not only to the people who could do something for her but also to the people who could do nothing for her. She brimmed with generosity and compassion. She truly followed the Hippocrates oath and helped people whenever they needed her aid. The experiences of life did not make her bitter but a better person who extended her helping hand to heal all those who needed healing.

She is well known for her adage, "Prevention is better than cure."

### Mary Agnes Chase

Mary Chase is a world renowned botanist and a suffragist. She was an activist who fought for voting rights for women.

Since the time she was born (1869), her life was teeming with tragedies. Within two years of her birth, her father Martin Meara passed away. In order to support the family of five children, her mother Mary Meara moved to Chicago to live with her mother.

The phase of difficulties had merely begun back then. After completing her studies in grammar school, she started working to support her family financially. She worked as a proofreader and typesetter at a small magazine for country schoolteachers called the School Herald. During the course of her job, she fell in love with William Chase and a romance ensued. In January 1888 both of them got married. Everything appeared to be finally going Mary's way until her husband contracted tuberculosis and died in the same year, leaving Chase encumbered and burdened with debt.

Mary worked many odd jobs in grocery and stockyards in order to repay her debt. Her struggles seemed endless but when the going got tough, her will to learn more became greater. She had an incredibly powerful mind which defied the odds that she had surmounted. Her joy in learning about the natural world gave her the strength to move past her losses.

She collected over 10,000 different types of grass samples from around the world and identified thousands of varieties of grasses swarming the world. She is known as the world's greatest authority on agrostology or the study of grasses.

Despite her talent and genius mind, she was denied the privileges that were given to men in science. Her funding to travel was rebuffed and her talent was dismissed. In fact, she had to pay her own way in order to research. But such excruciating circumstances did not

dishearten her or dampen her spirit. She finally received honorary degree from the University of Illinois.

It needs to be said that these women in science were not the victims of their circumstances. Their predicaments and problems did not stop them from achieving their dreams and goals. They were steadfast and unyielding. The universe was their laboratory and they never felt ashamed of dreaming. If seen through the lens of a realist, it seems surreal that Mary Chase could achieve so much in life despite her overwhelming tribulations and unending struggles. A realist would almost look at her accomplishments and achievements with disbeliefs. This is because a realist uses his reasoning that is influenced by history and whenever and wherever history is created; realism is swept off its feet.

The gender discrimination during Mary Chase's time was so rampant that women were denied privileges of education, research and voting. Voting rights would have still been alienated from women in America if Mary Chase would not have participated in Hunger strike. Mary Chase helped women in gaining the right to vote in 1920.

After her death, her home in DC became a place for Latin American Botanists to stay and learn while they were in United States of America.

When viewed from the eyes of a feminist, one can honestly say that men wanted complete autonomy over power. Because only through a centralized power can a lie be carved as a truth. A structural truth or a constructed truth is bound to collapse if power becomes decentralized. If women also had equal opportunities and privileges, patriarchal politicians and priests as well as patriarchal husbands, brothers and fathers would not be able to sustain their positions. Their conspiracies would be unraveled and their hypocrisies would be unfurled.

By denying women the power to vote, men limited the control of power. They abused power by promoting gender based discrimination and the cultural domestication of women through

marriage and procreation. Is a man not a parent? Did our ancestors not see the souls of the women in their lives?

Because men failed women and themselves, women had to protest against the abuse of power. Mary Chase's efforts made it possible for every woman in America to walk with pride and confidence in her stride. She not only shattered the illusions and delusions spawned by patriarchal ideologies but also ushered in a wave of feminism that is flowing unceasingly till this date.

Karen Horney

Psychoanalysis and the study of inner psyche and unconscious is equivalent to the name of the world renowned psychoanalyst Sigmund Freud. Freud was a pioneer in his study of the unconscious and his theory of oedipal instinct. It is well known as Oedipus complex.

Unfortunately, our knowledge of psychology is limited to a few names such as Freud, Carl Sagan and Skinner who conspicuously are males and sometimes this lack of knowledge persuades us to form a conclusion that women have not contributed much in the field of psychology. The truth is far from half-knowledge.

In fact, knowledge about women in science informs us of the stark opposite reality which destabilizes the center of male dominated science. Science cannot exist in isolation. It is not an island. There are myriad people participating in it and instilling it with life. If a kind of isolated science manages to survive, it would probably be a paralyzed entity.

Karen Horney was a psychoanalyst who created a new theory of neurosis to help people cope up with their anxiety. She also founded The American Journal of Psychoanalysis and The American Institute for Psychoanalysis.

Her school of thought was completely different from that of Freud. Freudian theory's area of focus was mainly male minds and argued that women wished they were men. It was Freud's patriarchal conviction which urged him to say that women suffered from "penis envy".

A number of questions surface in this regard. Is Freud right in saying so? Maybe to some extent but how can we contend that his opinion is correct when he is speaking about women despite not being a woman? Are his assertions absolute truths? It seems highly improbable.

Karen's theorized that women didn't want to become men but wanted the same privileges and freedom that men possessed in order to progress and advance their careers.

She strongly affirmed that people could learn to deal with their anxieties and eventually not need therapy. This conviction and opinion of her was disparaging to Freudian theories. If people could learn to cope up, they would not seek the help of a therapist. If problems disappear, would people consult a therapist? They wouldn't.

In spite of being criticized by many male psychoanalysts, she didn't stray from her path. She stood for honesty and candor. She spoke the truth and rebelled against everything she had been taught.

Her life account says that she battled with depression and this motivated her to study psychology. She created a new field of psychology called Neo-Freudianism.

She also developed the roots of feminist psychology. She explicitly argued that society didn't allow for women to have any real power. Society strangled women's confidence and forced women to live in their cocoons of illiteracy and faithlessness.

It has to be understood that power can only be given to women in two cases. First, if men give the power to women themselves. Second, if women assert their inner power through the manifestation of their potential. Of course, changes in power structure can be made through judicial decisions or political shifts but in both the cases, change comes only from men and women who are a part of the system.

It appears that the power that Karen talks about is the freedom and availability of equal opportunities to women. Because women in the past were suppressed and oppressed, their potential lay dormant and their true genius was never unfolded. It was the result of a patriarchal society which controlled each and every action of women. Women were never free. Their condition was like that of a servant or a slave. They were enslaved by culture and tradition.

## Conclusion

The exposition of the lives of women in science illuminates our minds and shatters patriarchal notions by uprooting regressive mentalities which refuse to believe in the mighty strength of a woman and her unshakeable inner strength which she derives from her faith in herself, existence or God. It is not easy to destroy the weeds of patriarchy but they can be cut by realizing that greatness is not this esoteric and isolated feature that only men can possess to transform the world. Greatness is something that truly exists in both men and women.

For thousands of years, women have been domesticated on the name of culture and politics. Even till this date, many societies do not talk about the success of women in literature, sports and science but the first step towards deconstructing any false notion is the provision or rendering of right knowledge. Historically accurate facts are undeniable proofs of women's glory and we can dismantle and vanquish the enemy of heterosexual patriarchy by the weapon of knowledge which empowers not only women but also strengthens men's faith in women who contribute immensely to our blue planet in manifold ways.



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